Standard Form 68 Jan. 1952	
U. S. GOVERNMENT MEMORANDUM OF CALL (Time 1. 55
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11 MAY 1956

MEMORANDUM FOR: Deputy Director/Intelligence

ATTENTION

: Mr. Robert Komer

Special Assistant to the DD/I

SUBJECT

: NSC Briefing on Technological Superiority

REFERENCE

: My memo to DD/I dated 23 April 1956, same subject

- 1. The attached material, which is forwarded for your information, has been supplied to the Department of Defense and the Office of Defense Mobilization for incorporation in the subject briefing. This briefing, originally scheduled for 17 May, will be given on 24 May. A "dry run" will be presented to the NSC Planning Board on 17 May.
- 2. In addition to the material mentioned above, we have supplied information to the National Science Foundation on Soviet basic scientific research and O/RR has furnished data on the Soviet economy to the Department of Defense. O/SI personnel have also critiqued drafts of the presentation to be made by the Department of Health, Education and Welfare on the Soviet and US educational systems.
- 3. It is expected that a draft of the complete briefing will be available for review about 15 May. A briefing memo will be prepared for the DCI on or about 22 May 1956.

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HERBERT SCOVYLLE, JR. Assistant Director Scientific Intelligence

Attachment: 1 (As stated)



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Evidence of Rapid Soviet Technological Advance in the Post War Poriod

Concrete examples of the tremendous progress made by the Soviets in catching up with the West in modern military technology are found in the fields of aircraft, radar, nuclear weapons, and guided missiles.

Aircraft

At the end of World War II the USSR had nothing but obsolescent piston-engine aircraft, and no practical experience in swept-wing and jet engine design and development. Despite this, by exercising a high priority and by exploiting German swept-wing data and British turbo-jet engine developments, the USSR was able, in three-year period, to develop and initiate production of an effective interceptor, the MIG-15 (RD-45 engine), having performance characteristics comparable to fighters then available (1948) to the Western nations. The MIG-15 was followed by the MIG-17, a trans-sonic day fighter (FARMER) and a twin-jet all-weather fighter (FLASHLIGHT), which reflect the original Soviet development of high performance aircraft.

In the field of bombers, Soviet World War II strategic and tactical doctrine did not require heavy bombers and they had none in 1945. First copying impounded B-29's in the TU-4, they expended relatively little effort in the design of more advanced piston-engine heavy bombers and in 1954 first showed an all jet heavy bomber, the BISON and the medium jet bomber, BADGER. These planes are now believed to be in operational units in considerable number. Also in 1955 they displayed seven 4-engine turbo-prop heavy bombers (BEAR).

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Reder

At the end of World War II the USSR had two types of native radar sets supplemented by a variety of US and UK lend-lease radars and captured German and Japanese sets. With the exception of the appearance of one other design in 1946, the radar situation in the USSR showed only an increase in the number of simple native sets until about 1950. During this period, foreign developments were studied and the Soviet development program was getting underway. Since 1950, a considerable number and variety of new redars have been observed reflecting original Soviet development of high performance radar adapted to their tactical needs. Examples include the GAGE, a combination early warning and ground controlled intercept set with a range of 150-200 miles against targets such as propellordriven medium bombers: PATTYCAKE, a height finder radar usually associated with GAGE; and numerous naval radars first seen on the cruiser Sverdlov in 1953 and since studied more closely. Considerable evidence indicates Soviet use of airborne intercept radar as well as blind bombing and navigational radar. The problems of developing components, designing antennes, reducing weight and increasing ruggedness which apparently have been solved by the Soviets in such development evidence the high competence which has been acquired by Soviet electronic engineers in the relatively short period since 1945.

Muclear Weapons

Soviet achievement of an atomic explosion in 1949 is an outstanding example of the rapid rate at which Soviet original research

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Since this first nuclear test in August of 1949 the Soviet have produced a substantial stockpile of nuclear weapons which can produce explosions ranging from the equivalent of a few thousand to several million tons of THT. It has been amply demonstrated that the gaps left by the exploitation of foreign developments have been filled with independent research of a high degree of competence and there is clear evidence that in a number of instances Soviet atomic energy practices do not follow those of the US, UK, or Canada.

Guided Missilos

Although the USSR had no known guided missile program at the close of World War II, we have conclusive evidence of great postwar Soviet interest in guided missiles and many strong indications of a large and active research and development program. Immediately after

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exploitation of the German guided missile personalities, facilities, and equipment. As a result of this program, by 1948 the Soviets were thoroughly familiar with German work, and by 1950, they were phasing-out the German specialists. We therefore, estimate that the native Soviet guided missile program received priority attention starting about 1948.

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Comment

While it is difficult to assess the present position of Soviet developments relative to those of the US, comparison with the Soviet

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position of ten years ago is sufficient cause for concern. During that ten year period the Soviets have covered the ground that took thirty or more years to cover in the West. While it must be remembered that it is easier to walk where someone else has blazed the trail, the Soviets have already shown that when the trail ends they can carry on independently. Prediction of the relative position of the US and USSR in five or ten years is even more difficult than assessing the present situation. The interplay of many factors outside the scientific field such as international political maneuvering, economic rivalry and internal social or economic instability will have far reaching effects on the extent and direction of research and development efforts on both sides. The possibility of a technological breakthrough which would alter radically the strategic situation cannot be ignored.